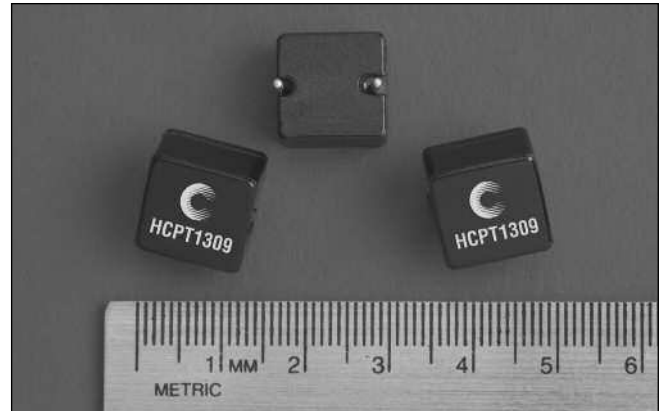


Description

- 105°C maximum total temperature operation
- 13.2mm x 13.2mm x 9.0mm through hole package
- Core material: Powder Iron
- Inductance range from 0.20µH to 3.3µH
- Current range from 90.0 Amps to 11.4 Amps
- Frequency range up to 1MHz



Applications

- Next generation processors
- High current DC-DC converters
- VRM, multi-phase buck regulator
- Desktop computers
- Video game power

Environmental Data

- Storage temperature range: -40°C to +105°C
- Operating temperature range: -40°C to +105°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

Packaging

- Supplied in bulk packaging, 100 parts per tray

Part Number	OCL (1) nominal +/- 20% (µH)	I _{rms} (2) Amperes	Isat Amperes (3) Peak 20% rolloff @20°C	Isat Amperes (4) Peak 30% rolloff @20°C	DCR (mΩ) nom @20°C	K-factor (5)
HCPT1309-R20-R	0.20	43.1	72.2	90.0	0.426	154.1
HCPT1309-R47-R	0.49	34.0	43.3	55.0	0.624	92.4
HCPT1309-1R0-R	0.96	19.4	30.9	40.0	1.90	66.0
HCPT1309-1R5-R	1.59	13.7	24.1	30.6	3.82	51.4
HCPT1309-2R2-R	2.27	12.5	19.7	25.0	4.10	42.0
HCPT1309-3R3-R	3.31	11.4	16.7	21.0	4.80	35.6

(1) OCL: Open Circuit Inductance test parameters: 100kHz, 0.1V_{rms}, 0.0Adc.

(2) I_{rms}: DC current for an approximate ΔT of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 105°C under worst case operating conditions verified in the end application.

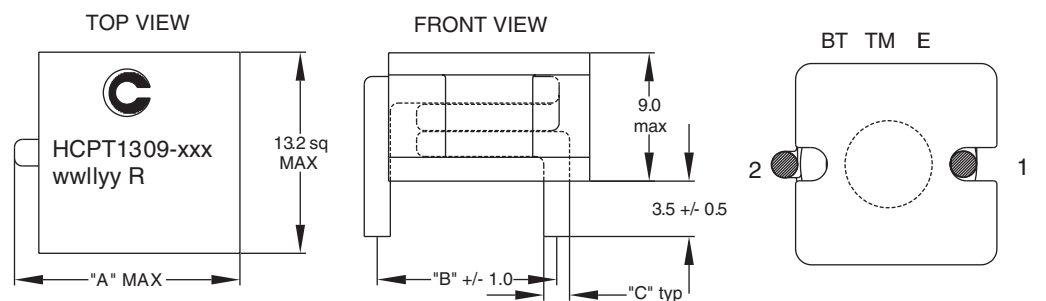
(3) Isat Amperes peak for approximately 20% rolloff (@20°C)

(4) Isat Amperes peak for approximately 30% rolloff (@20°C)

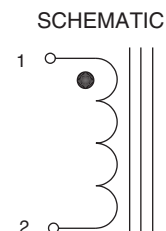
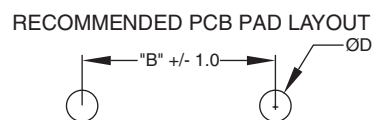
(5) K-factor: Used to determine B p-p for core loss (see graph).

B p-p = K*L*ΔI, B p-p: (Gauss), K: (K factor from table), L: (Inductance in uH), ΔI (Peak to peak ripple current in Amps).

Mechanical Diagrams

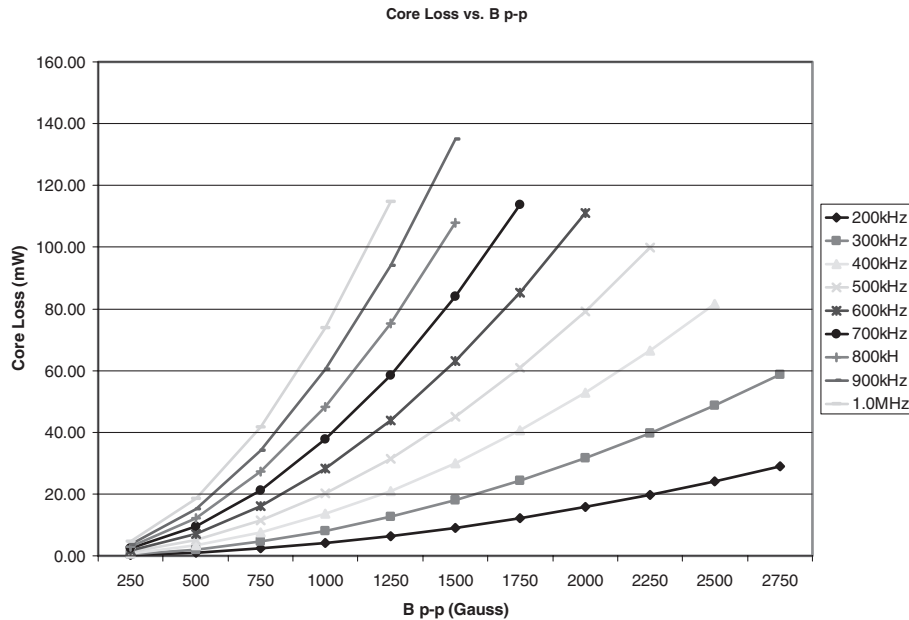


Part No	"A"	"B"	"C"	"D"
HCPT1309-R20	14.0	12.2	1.63	2.13
HCPT1309-R47	14.0	12.2	1.63	2.13
HCPT1309-1R0	13.7	12.0	1.29	1.6
HCPT1309-1R5	13.5	11.8	1.15	1.40
HCPT1309-2R2	13.5	11.8	1.15	1.40
HCPT1309-3R3	13.5	11.8	1.15	1.40



Dimensions are in millimeters.
wwlyy = Date Code. R = Revision Level.

Core Loss



Inductance Characteristics

